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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,194	02/26/2004	Bowie G. Keefer	6454-68030-01	6958
24197 7590 11/26/2007 KLARQUIST SPARKMAN, LLP 121 SW SALMON STREET SUITE 1600 PORTLAND, OR 97204			EXAMINER CREPEAU, JONATHAN	
			ART UNIT 1795	PAPER NUMBER
			MAIL DATE 11/26/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

### Application No.

10/789,194

### Applicant(s)

KEEFER ET AL.

### Examiner

Jonathan S. Crepeau

### Art Unit

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 12-15 and 19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 16-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6-1-07</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. This Office action addresses claims 1-19. Claims 12-15 and 19 are nonelected without traverse and are withdrawn herein. Claims 17 and 18 are newly rejected under 35 USC 112, first paragraph, as necessitated by amendment. Applicant's amendments and the filing of a statement of common ownership are sufficient to obviate the rejections under 35 USC 102 and 103. As such, claims 1-11 and 16 define allowable subject matter. However, claims 1-11 and 16-18 remain and/or are newly rejected under the doctrine of obviousness-type double patenting. Accordingly, this action is made final.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 17 and 18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 17 and 18 recite that the adsorbent material comprises an adsorbent laminate having a specified void fraction. There does not appear to be any support for the recited void

fractions in the instant application nor in provisional application 60/285527, which is incorporated by reference. Correction is required.

### ***Double Patenting***

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 1-11 and 16-18 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-30 of U.S. Patent No. 7,097,925 in view of Keefer et al (U.S. Patent 6,902,602). The ‘925 patent claims recite a gas separation means for recovering hydrogen but do not recite the structure as recited in the instant claims.

Keefer '602 is directed to an apparatus for gas separation by combined pressure swing and displacement purge. Claim 23 of the reference discloses a rotor and stator valve structure, with feed gas, purge gas, and buffer gas compartments. The apparatus is specifically designed to separate hydrogen (see abstract). The purge gas may be heated before being supplied to adsorbers (col. 2, line 22).

It is submitted that the artisan would be motivated to use the combined pressure swing adsorption and displacement purge apparatus of Keefer '602 as the hydrogen separation means of the '925 patent claims. At column 2, line 24 et seq., the '602 reference discusses the relative advantages of its apparatus over conventional displacement purge processes. As such, the artisan would have sufficient motivation to use the apparatus of the '602 reference in the system of the '925 patent claims. Thus, the instant claims and the '925 patent claims are obvious variants.

6. Claims 1-11 and 16-18 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-92 of U.S. Patent No. 7,087,331 in view of Keefer et al (U.S. Patent 6,902,602). The '331 patent claims recite a hydrogen gas separation system but do not recite the structure as recited in the instant claims.

Keefer '602 is directed to an apparatus for gas separation by combined pressure swing and displacement purge. Claim 23 of the reference discloses a rotor and stator valve structure, with feed gas, purge gas, and buffer gas compartments. The apparatus is specifically designed to

separate hydrogen (see abstract). The purge gas may be heated before being supplied to adsorbers (col. 2, line 22).

It is submitted that the artisan would be motivated to use the combined pressure swing adsorption and displacement purge apparatus of Keefer '602 as the hydrogen separation means of the '331 patent claims. At column 2, line 24 et seq., the '602 reference discusses the relative advantages of its apparatus over conventional displacement purge processes. As such, the artisan would have sufficient motivation to use the apparatus of the '602 reference in the system of the '331 patent claims. Thus, the instant claims and the '331 patent claims are obvious variants.

7. Claims 1-11 and 16-18 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-16 of U.S. Patent No. 6,921,597 in view of Keefer et al (U.S. Patent 6,902,602). The '597 patent claims (i.e., claim 6) recite a gas separation means for recovering hydrogen but do not recite the structure as recited in the instant claims.

Keefer '602 is directed to an apparatus for gas separation by combined pressure swing and displacement purge. Claim 23 of the reference discloses a rotor and stator valve structure, with feed gas, purge gas, and buffer gas compartments. The apparatus is specifically designed to separate hydrogen (see abstract). The purge gas may be heated before being supplied to adsorbers (col. 2, line 22).

It is submitted that the artisan would be motivated to use the combined pressure swing adsorption and displacement purge apparatus of Keefer '602 as the hydrogen separation means of the '597 patent claims. At column 2, line 24 et seq., the '602 reference discusses the relative advantages of its apparatus over conventional displacement purge processes. As such, the artisan would have sufficient motivation to use the apparatus of the '602 reference in the system of the '597 patent claims. Thus, the instant claims and the '597 patent claims are obvious variants.

8. Claims 1-11 and 16-18 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 4, 5, 7-9, and 21-30 of copending Application No. 10/389541. Although the conflicting claims are not identical, they are not patentably distinct from each other because the elements of the instant claims not recited in the '541 claims, such as the exporting feature in instant claim 1 and the heat exchanger feature in instant claim 8, would be obvious to a skilled artisan since they provide additional advantages in the system defined by the '541 application claims.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

9. Claims 1-11 and 16-18 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1, 4, 7, and 12-16 of copending Application No. 10/671750 in view of in view of Keefer et al (U.S. Patent 6,902,602). The '750 application claims recite a gas separation means for recovering hydrogen but do not recite the structure as recited in the instant claims.

Keefer '602 is directed to an apparatus for gas separation by combined pressure swing and displacement purge. Claim 23 of the reference discloses a rotor and stator valve structure, with feed gas, purge gas, and buffer gas compartments. The apparatus is specifically designed to separate hydrogen (see abstract). The purge gas may be heated before being supplied to adsorbers (col. 2, line 22).

It is submitted that the artisan would be motivated to use the combined pressure swing adsorption and displacement purge apparatus of Keefer '602 as the hydrogen separation means of the '750 application claims. At column 2, line 24 et seq., the '602 reference discusses the relative advantages of its apparatus over conventional displacement purge processes. As such, the artisan would have sufficient motivation to use the apparatus of the '602 reference in the system of the '750 application claims. Thus, the instant claims and the '750 application claims are obvious variants.

This is a provisional obviousness-type double patenting rejection.



*Response to Arguments*

10. Applicant's arguments filed May 7, 2007 have been fully considered but they are not persuasive. Applicants urge, regarding the double patenting rejections over the '925 patent, the '331 patent, the '597 patent, and the '750 application that these patents/applications do not mention a heat exchanger. However, it is noted that the '602 patent teaches a heating step for the purge gas (col. 2, line 22), thereby rendering this feature obvious as explained in the rejections.

Regarding the '541 application, Applicants state that the claims of this application make no mention of exporting enriched fuel gas or of using a heat exchanger. However, both of these features would be obvious to use in the '541 application claims, as they are both known from references already of record. As set forth in the above rejections, Keefer '602 fairly suggests a heat exchanger. Further, claim 1 of the '925 patent discloses the claimed exporting feature. As such, these limitations are still believed to define obvious variants of the '541 application claims.

*Conclusion*

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (571) 272-1299. The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

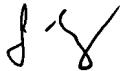
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan, can be reached at (571) 272-1292. The phone number for the organization where this application or proceeding is assigned is (571) 272-1700. Documents may be faxed to the central fax server at (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

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may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jonathan Crepeau  
Primary Examiner  
Art Unit 1795  
November 21, 2007